

WHAT IS CLAIMED IS:

1. An apparatus for producing a real-time anaglyph comprising:

5 a graphics engine for providing a sync signal and generating a left eye image and a right eye image in accordance with a horizontal offset calculated from a 3D graphic animation, wherein the horizontal offset between the left and the right eye images provides illusion of depth;

10 a memory for storing the left eye image and the right eye image; and

15 an anaglyph generator fetching the left eye image and the right eye image from the memory in response to the sync signal, for producing as outputs a filtered left image and a filtered right image, whereby the filtered left image is tinted with a first color and the filtered right image is tinted with a second color, in which the first and the second colors are complementary colors.

20 2. The apparatus of claim 1 wherein the anaglyph generator alternately outputs the filtered left image and the filtered right image in accordance with the sync signal.

25 3. The apparatus of claim 2 wherein the anaglyph generator comprises:

a first multiplexer, responsive to a first signal, to filter the reds out of the left eye and the right eye images respectively if the first signal is deasserted,

and to admit the reds from the left eye and the right eye images respectively if the first signal is asserted;

5 a second multiplexer, responsive to a second signal, to filter the greens out of the left eye and the right eye images respectively if the second signal is deasserted, and to admit the greens from the left eye and the right eye images respectively if the second signal is asserted; and

10 a third multiplexer, responsive to a third signal, to filter the blues out of the left eye and the right eye images respectively if the third signal is deasserted, and to admit the blues from the left eye and the right eye images respectively if the third signal is asserted.

15 4. The apparatus of claim 3 wherein the first color is a blue-green color and the second color is a red color.

20 5. The apparatus of claim 4 wherein the first multiplexer filters the reds out of the left eye image and the second and the third multiplexers admit the greens and the blues from the left eye image, respectively, by deasserting the first signal and asserting the second and the third signals, to generate the filtered left image tinted blue-green.

25 6. The apparatus of claim 4 wherein the first multiplexer admits the reds from the right eye image and the second and the third multiplexers filter the greens and the blues out of the right eye image, respectively, by asserting the first signal and deasserting the second

and the third signals, to generate the filtered right image tinted red.

7. The apparatus of claim 4 wherein the filtered left image and the filtered right image, alternately output from the anaglyph generator in accordance with the sync signal, are viewed through a pair of glasses having a blue-green lens over one eye and a red lens over the other eye, thus creating perception of depth.

8. The apparatus of claim 3 wherein the first color is a red-blue color and the second color is a green color.

9. The apparatus of claim 8 wherein the second multiplexer filters the greens out of the left eye image and the first and the third multiplexers admit the reds and the blues from the left eye image, respectively, by deasserting the second signal and asserting the first and the third signals, to generate the filtered left image tinted red-blue.

10. The apparatus of claim 8 wherein the second multiplexer admits the greens from the right eye image and the first and the third multiplexers filter the reds and the blues out of the right eye image, respectively, by asserting the second signal and deasserting the first and the third signals, to generate the filtered right image tinted green.

11. The apparatus of claim 8 wherein the filtered left image and the filtered right image, alternately output

from the anaglyph generator in accordance with the sync signal, are viewed through a pair of glasses having a red-blue lens over one eye and a green lens over the other eye, thus creating perception of depth.

5 12. The apparatus of claim 1 wherein the anaglyph generator comprises an adder, to manipulate the filtered left image and the filtered right image to be superimposed on each other, to produce a stereo image.

10 13. The apparatus of claim 12 wherein the anaglyph generator further comprises a multiplier, to multiply the left eye image by a first mask and to multiply the right eye image by a second mask, to separately produce the filtered left image and the filtered right image.

15 14. The apparatus of claim 13 wherein the multiplier separately blocks the second color of the left eye image by the first mask to produce the filtered left image tinted with the first color, and blocks the first color of the right eye image by the second mask to produce the filtered right image tinted with the second color.

20 15. The apparatus of claim 12 wherein the adder performs a bit-block transfer operation used in computer graphics techniques.

25 16. The apparatus of claim 14 wherein the first color is a blue-green color and the second color is a red color.

17. The apparatus of claim 16 wherein the stereo image is viewed through a pair of glasses having a blue-green lens over one eye and a red lens over the other eye, thus creating perception of depth.

5       18. The apparatus of claim 14 wherein the first color is a red-blue color and the second color is a green color.

10       19. The apparatus of claim 18 wherein the stereo image is viewed through a pair of glasses having a red-blue lens over one eye and a green lens over the other eye, thus creating perception of depth.

15       20. The apparatus of claim 1 wherein the anaglyph generator is enabled to produce the filtered left image and the filtered right image if a stereo enable signal is asserted.